



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,531	07/26/2006	Martin Heyder	3773	8914
7590 Striker Striker & Stenby 103 East Neck Road Huntington, NY 11743				
EXAMINER DESAL, NAISHADH N				
ART UNIT		PAPER NUMBER		
2834				
MAIL DATE		DELIVERY MODE		
10/22/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,531

Applicant(s)

HEYDER, MARTIN

Examiner

NAISHADH N. DESAI

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☒ Claim(s) 12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/55/08)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-11 are allowed over prior art of record.
2. The following is an examiner's statement of reasons for allowance:

None of the prior art references of the record, either stand-alone or in combination, teaches an axial spring element wherein an inner diameter of the inner ring forms a clearance fit with an outer diameter of the rotor shaft, thereby simplifying axial installation and axial backlash compensation of the spring element, wherein the rotor component and not the rotor shaft is configured to perform radial guidance of the spring element, and wherein for assembling the electrical machine, the axial spring element is fixed in position at least axially on the pre-installed rotor, such that the rotor is insertable overhead via a blind assembly into the roller bearing, which was previously installed in housing part.

JP 05030701 disclose a motor comprising: a pre-load bearing, a coil spring having a flat surface part, brought into press contact respectively with a rotor and an inner ring of a bearing shaft bush to fit slidably to a shaft.

US 5959381 disclose dual rate spring for bearing retention, wherein the inner portion of the spring element defines a thrust portion.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirakawa (JP 05030701) in view of Fischer et al (US 5959381).

4. Regarding claim 12:

An electric machine for driving functional elements in a motor vehicle (pre-amble, patentable weight not given to intended use),

which includes a rotor shaft that is rotatably supported in a housing part of a housing via a roller bearing (Fig 2,5), an axial spring element being located between the roller bearing and a rotor component on the rotor shaft (Fig 2,15), where in the axial spring element includes an inner ring and an outer ring, which are interconnected in an axially resilient manner, and the outer ring is connected with the rotor component for a joint rotation relative to the housing part, wherein the rotor component is designed as an

armature lamination core (Fig 2,12 shows that the rotor is laminated), and the housing part is designed as a pole pot (Fig 1), and wherein the outer ring is attached directly to an end face of the armature lamination core (Fig 4,9), wherein said armature lamination core has multiple lamella layers (Fig 2,12).

Hirakawa teaches the use of a spring being attached to a rotor of a motor rotates with the rotor. Hirakawa does not teach the use of a spring having a particular shape or form. Fischer et al teaches a spring for a motor having both inner and outer rings interconnected in an axially resilient manner (Figs 3-5). Fischer et al do not teach the use of both floating and fixed bearings. The use of springs is very well known in the motor art and particularly, the use of parts having different shapes and forms. It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Hirakawa to use a spring having a different shape or form as taught by Fischer et al. The motivation to do so would be that it would further provide different support forces for maintaining the chosen parts in place, while simultaneously providing thrust compensating or accommodating forces (Col 2 ll 1-5 of Fischer et al).

Prior art teaches the use of a spring to absorb thrust and for reducing vibrations in the motor, whether the spring is shaped with continuous outer ring or non continuous outer "ring elements" is a matter of obvious engineering design choice based on the configuration of the motor's size/shape as well as the location of the rotor with respect to the shaft and housing. The motivation would be based on the parameters of space availability, location of the rotor with respect to the stator, shaft, housing, cost and the

overall design criteria or objectives for the motor to achieve. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Conclusion

Response to Arguments

5. Applicant's arguments, filed 8/04/2008, have been fully considered and are persuasive in view of applicant's amendments. Claims 1-11 are allowed over prior art of record.
6. Applicant's arguments regarding claim 12 that claim limitation "interconnected in an axially resilient manner" is not suggested by the references cited by examiner, is found non persuasive. It is clear that the spring of Hirakawa is resilient in an axial manner. Examiner also notes that it is well known to make springs axially resilient. As cited previously by examiner, Fasterding et al (US 2005/0012417) teaches a spring having elements being interconnected in an axially resilient manner.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dang D Le/
Primary Examiner, Art Unit 2834

/Naishadh N Desai/
Examiner, Art Unit 2834